

Remarks and Argument

By Office Action dated December 1, 2005, claims 1-6, 9-12 and 18 were rejected, and claims 7, 8, 17, 19 and 20 were objected to as being dependent upon a rejected base claim. The claims objected to would be allowable if rewritten in independent form with the limitations of the base claim and any intervening claims.

More specifically, claims 1, 5, 6 and 9-12 were rejected under 35 U.S.C. § 102(b) as being anticipated by Owens (U.S. 5,148,512). The Examiner asserts that Owens discloses an apparatus comprising of barrel (6) formed of material having a first coefficient of thermal conductivity, including a wall having an inner surface, thickness and spaced holes. It was asserted that conductors (11) having a second coefficient of thermal conductivity greater than the first is located in and engages a hole. Further, the Examiner asserts that the holes are mutually spaced and arranged in staggered axially directed rows being mutually offset laterally, and that the holes are staggered in laterally directed columns with adjacent columns being mutually offset axially. Finally, it is concluded that each hole is a cylinder, and the conductor is a cylinder or stepped cylinder made of aluminum.

Claims 1-4, 6, 9-12, 14-16 and 18 were also rejected under 35 U.S.C. § 102(b) as being anticipated by Kuehne (U.S. 215,372). The Examiner asserts that Kuehne discloses an apparatus comprising a barrel formed of material having a first coefficient of thermal conduction, and has a wall with an inner surface and thickness formed with mutually spaced holes. Conductors (d,e) purportedly having a second coefficient of thermal conductivity greater than the first coefficient. It is asserted that a rotatable screw is located within the inner surface; the barrel is made of steel and each hole and conductor is a cylinder. Further, it is asserted that Kuehne discloses an

apparatus having a rotatable screw extending radial with a push surface for urging material to move along the barrel as the screw rotates.

Finally, regarding claims 9-13, each was rejected under 35 U.S.C. § 102(b) as being anticipated by Blais (U.S. 2,313,315), as well as Korpan et al. (U.S. 2005/0082038). Both patents are identified to describe a conductor made of oxygen-free copper.

With this Response and Amendment, claims 1, 8-9 and 14 are being amended, while claims 6, 18 and 19 are canceled. Further, this Amendment is supported by the disclosure in the application.

Discussion

Owens describes a hand-held hair dryer with a passage for delivery of blown air from a blower to a heated air-exhaust. Orifices (9) are arranged on the side of the dryer's exhaust barrel (6), generally about and forward of heating coils (5). The orifices (9) are provided with heat accumulators (9). The orifices do not extend over the entire length of the barrel, but only along the portion of the barrel either immediately exterior of the heating element or somewhat forward thereof after the air passes the element, or both. (*See* Owens, column 2, ll.19-23). As the air passes through the orifices, the accumulators are heated, which then transmits its heat to the adjacent hair. Unlike the cited reference, this apparatus for plasticating resinous material in the instant application must withstand relatively high injection pressure, yet be able to transfer heat to the plastic resin from the heat source outside the barrel. *See*, application at p.2, ll.17-18; pp.11, l.7-13 and p.15, ll.10-11.

Kuehne discloses a boiler (A) covered by a jacket (D) made of wood, felt or other non-conductive material, which is intended to prevent heat radiation. (*See* Kuehne, column 1 of p.1). Applicant respectfully disagrees that Kuehne describes a rotatable screw having an axial core (F)

with a helical flight. Instead, Kuehne shows a boiler (A) having a coil (C) with an inlet (d) and an outlet (e) for steam and condensed water. Blades (E) are secured to a shaft (F). The blades are inclined, and therefore, move the material within the boiler when rotated. Stationary blades (H) are positioned relative to blades (E) and aid in lifting material forced against them by said revolving blades. Unlike the cited reference, the apparatus for plasticating resinous material in claim 2 of the instant application includes a rotatable screw having a main flight arranged helically on and extended radially from the core.

Finally, claim 1 was combined by amendment with allowed dependent claim 7. Also, independent claim 9 was amended to describe the holes in the barrel's wall thickness, with each extending radially toward the cavity from the outer surface into the wall to a depth not more than approximately 75% of the wall thickness. Further, independent claim 14 was combined by amendment with allowed claim 19. These limitations of the amended claims still further enhance the effectiveness of the apparatus of the instant application. Again, an important factor here is to maintain the structural integrity of the barrel, which during processing must withstand pressures of approximately 20,000 psi against its internal surface. Obviously, neither the Kuehne design nor Owens design, which describe the inlet/outlet tubing and accumulator, respectively, passing through the wall thickness, would hold the internal pressures needed when plasticating resinous materials. For this and other reasons, these are not quite analogous.

Conclusion

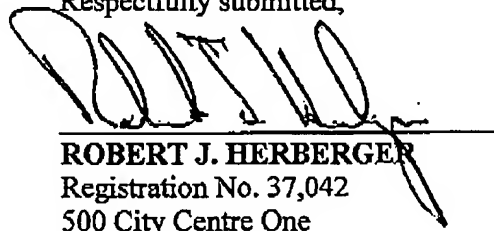
The Examiner's indication of allowability of claims 1, 8, 17, 19 and 20 is noted with appreciation. Applicant believes that the amended independent claims 1, 9 and 14, and amended dependent claims 8, 13 and 20, as well as the remaining dependent claims, are acceptable as a

result thereof, and the comments made herein. With the same, the Application should now be in a condition for allowance.

The Examiner urged to contact the undersigned attorney if there are any further matters standing in the way of allowance. Applicant respectfully requests that the instant Application be passed to issuance.

Date: 12/27/05

Respectfully submitted,



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CERTIFICATE OF FACSIMILE

I hereby certify that the attached **Response and Amendment** to the instant application identified below is being sent this 27th day of December, 2005, via facsimile to the Commissioner of Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450, Mail Stop Non-Fee at fax number (571) 273-8300.

Applicant: Timothy Womer, et al
Serial No.: 10/784,698
Filed: 02/23/2004
Docket No.: 3522.26
Title: Enhanced Thermal Conduction
For Plasticating Resinous Material



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